DESIGN SYSTEM PROVIDING AUTOMATIC SOURCE CODE GENERATION FOR PERSONALIZATION AND PARAMETERIZATION OF USER MODULES

ABSTRACT OF THE INVENTION

A method and system of automatically generating source code for configuring a programmable microcontroller. The method involves displaying virtual blocks in a computerized design system where the virtual blocks correspond to programmable circuit blocks in a microcontroller chip. The user selects a user module that defines a particular function to be performed on the microcontroller. The user assigns the virtual blocks to the user module. The design system then automatically generates source code for configuring the programmable blocks to perform the desired function. The source code can then be assembled, linked and loaded into the microcontroller's memory system. When executed on the microcontroller, the executable code will then set registers within the blocks to implement the function. Source code is automatically generated for: (1) realizing the user module in a hardware resource; and also (2) to configure the user module to behave in a prescribed manner.